



Contents of *Aquaculture*, Volume 242

VOL. 242 NOS. 1–4

20 December 2004

Diseases

- Expression of immune-related genes in the common carp (*Cyprinus carpio* L.) after stimulation by CpG oligodeoxynucleotides
A.C.M.A.R. Tassakka (Kagoshima, Japan) and M. Sakai (Miyazaki, Japan) 1
- The skin ulceration disease in cultivated juveniles of *Holothuria scabra* (Holothuroidea, Echinodermata)
P. Becker (Mons, Belgium), D. Gillan (Brussels, Belgium), D. Lanterbecq (Mons, Belgium),
M. Jangoux (Mons, Brussels, Belgium; Tuléar, Madagascar), R. Rasolofonirina (Brussels, Belgium;
Tuléar, Madagascar), J. Rakotovoao (Tuléar, Madagascar) and I. Eeckhaut (Mons, Belgium; Tuléar,
Madagascar) 13
- Microbial community dynamics in a larval aquaculture system of the tropical rock lobster, *Panulirus ornatus*
D.G. Bourne, N. Young, N. Webster, M. Payne, M. Salmon, S. Demel and M. Hall
(Townsville, QLD, Australia) 31
- White spot syndrome virus genetic variants detected in Mexico by a new multiplex PCR method
L. Galaviz-Silva, Z.J. Molina-Garza, J.M. Alcocer-González (Nuevo León, México),
J.L. Rosales-Encinas (Unidad, Zacatenco) and C. Ibarra-Gómez (Sonora, México) 53
- Production of recombinant structural proteins from the Indian WSSV isolate
S. Sathish, S. Musthaq, A.S. Sahul Hameed (Chennai, India) and R.B. Narayanan (Tamil Nadu, India) 69
- Vibriosis and atypical furunculosis vaccines; efficacy, specificity and side effects in Atlantic cod,
Gadus morhua L.
H. Mikkelsen, M.B. Schröder and V. Lund (Tromsø, Norway) 81

Genetics

- Enhanced resistance to *Aeromonas hydrophila* infection and enhanced phagocytic activities in human lactoferrin-transgenic grass carp (*Ctenopharyngodon idellus*)
M. Weifeng, W. Yaping, W. Wenbo, W. Bo, F. Jianxin and Z. Zuoyan (Wuhan, P.R. China) 93
- A sex-specific linkage map of the white shrimp *Penaeus (Litopenaeus) vannamei* based on AFLP markers
F. Pérez (Guayaquil, Ecuador; Leuven, Belgium), C. Erazo, M. Zhinaula (Guayaquil, Ecuador),
F. Volckaert (Leuven, Belgium) and J. Calderón (Guayaquil, Ecuador) 105
- Potential sources of error in parentage assessment of turbot (*Scophthalmus maximus*) using microsatellite loci
J. Castro, C. Bouza (Lugo, Spain), P. Presa (Vigo, Spain), A. Pino-Querido (Lugo, Spain),
A. Riazza, I. Ferreira (A Coruña, Spain), L. Sánchez and P. Martínez (Lugo, Spain) 119
- Classification of jinjiang oysters *Crassostrea rivularis* (Gould, 1861) from China, based on morphology and phylogenetic analysis
H. Wang (Shandong, Beijing, PR China), X. Guo (Shandong, PR China; NJ, USA), G. Zhang and
F. Zhang (Shandong, PR China) 137

Husbandry and Management

On-farm and on-station comparison of wild and domesticated Cameroonian populations of <i>Oreochromis niloticus</i> R.E. Brummett, D.E. Angoni and V. Pouomogne (Yaoundé, Cameroon)	157
An assessment of biosecurity utilization in the recirculation sector of finfish aquaculture in the United States and Canada J. Delabbio (Bluefield, WV, USA), B.R. Murphy (Blacksburg, VA, USA), G.R. Johnson (Charlottetown, Canada) and S.L. McMullin (Blacksburg, VA, USA)	165
Age determination of <i>Buccinum isaotakii</i> (Gastropoda: Buccinidae) from the growth striae on operculum and growth under laboratory conditions A.S. Ilano (Hakodate, Japan; Cebu City, Philippines), A. Ito (Hakodate, Japan), K. Fujinaga (Hokkaido, Japan) and S. Nakao (Hakodate, Japan)	181
Effect of stocking density on growth, survival and yield of juvenile redclaw crayfish <i>Cherax quadricarinatus</i> (Decapoda: Parastacidae) in gravel-lined commercial nursery ponds J. Naranjo-Páramo, A. Hernandez-Llamas and H. Villarreal (La Paz, Mexico)	197
Effects of temperature and food density on the survival and growth of early stage phyllosoma of the western rock lobster, <i>Panulirus cygnus</i> G.C. Liddy, B.F. Phillips (Perth, W.A. Australia) and G.B. Maguire (North Beach, W.A. Australia)	207
Complete larval development of the sea urchin <i>Lytechinus variegatus</i> fed an artificial feed S.B. George (Stateboro, GA, USA), J.M. Lawrence (Tampa, FL, USA) and A.L. Lawrence (Port Aransas TX, USA)	217
Induced ovulation and spawning of pond raised African giant catfish, <i>Heterobranchius bidorsalis</i> by exogenous hormones O.T. Adebayo and O.A. Fagbenro (Akure, Nigeria)	229
Effects of depth and water flow on growth, survival and bioactivity of two temperate sponges cultured in different seasons A.R. Duckworth, C.N. Battershill (Wellington, New Zealand) and D.R. Schiel (Christchurch, New Zealand)	237
Population models of farmed abalone <i>Haliotis diversicolor supertexta</i> exposed to waterborne zinc B.-C. Chen (Changhua, Taiwan ROC) and C.-M. Liao (Taipei, Taiwan ROC)	251
Cryopreservation of sperm of the Pacific oyster (<i>Crassostrea gigas</i>): development of a practical method for commercial spat production S.L. Adams (Dunedin, New Zealand), J.F. Smith (Hamilton, New Zealand), R.D. Roberts, A.R. Janke, H.F. Kaspar (Nelson, New Zealand), H. Robin Tervit (Hamilton, New Zealand), P. Anne Pugh, S.C. Webb and N.G. King (Nelson, New Zealand)	271
Assessment of some chemical parameters in marine sediments exposed to offshore cage fish farming influence: a pilot study F. Aguado-Giménez and B. García-García (Murcia, Spain)	283
Lipid and fatty acid composition of pre- and post-spawning blacklip (<i>Haliotis rubra</i>) and greenlip (<i>Haliotis laevis</i>) abalone conditioned at two temperatures on a formulated feed M.A. Grubert (Tarooma, Launceston, Tas., Australia), G.A. Dunstan (Hobart, Tas., Australia) and A.J. Ritar (Tarooma, Tas., Australia)	297
Effects of chronic ammonia exposure on gonad growth and survival in green sea urchin <i>Strongylocentrotus droebachiensis</i> S.I. Siikavuopio, T. Dale (Tromsø, Norway), A. Foss (Bergen, Norway) and A. Mortensen (Tromsø, Norway)	313
Social control of growth in the redclaw crayfish, <i>Cherax quadricarinatus</i> : testing the sensory modalities involved I. Karplus and A. Barki (Bet Dagan, Israel)	321
Fecundity of the Japanese crayfish, <i>Cambaroides japonicus</i> : ovary formation, egg number and egg size K. Nakata and S. Goshima (Hokkaido, Japan)	335
The effects of common carp bioturbation on fishpond bottom soil G. Ritvo, M. Kochba and Y. Avnimelech (Haifa, Israel)	345

Effects of chronic nitrite exposure on gonad growth in green sea urchin <i>Strongylocentrotus droebachiensis</i> S.I. Siikavuopio, T. Dale, J.S. Christiansen and I. Nevermo (Tromsø, Norway)	357
Farmed tilapia <i>Oreochromis mossambicus</i> involved in transport and biouptake of arsenic in aquacultural ecosystems B.-C. Chen (Changhua, Taiwan) and C.-M. Liao (Taipei, Taiwan)	365
Periphyton-based pond polyculture system: a bioeconomic comparison of on-farm and on-station trials M.E. Azim (Saitama, Japan; Wageningen, The Netherlands), M.M. Rahaman, M.A. Wahab (Mymensingh, Bangladesh), T. Asaeda (Saitama, Japan), D.C. Little (Scotland, United Kingdom) and M.C.J. Verdegem (Wageningen, The Netherlands)	381
Comparison of two different methods for evaluating the hydrodynamic performance of an industrial-scale fish-rearing unit M.R. Rasmussen (Aalborg, Denmark) and E. McLean (Blacksburg, VA, USA)	397
Nutrition	
Effect of dietary lipids on fatty acid composition and metabolism in juvenile green sea urchins (<i>Strongylocentrotus droebachiensis</i>) J.D. Castell, E.J. Kennedy, S.M.C. Robinson, G.J. Parsons, T.J. Blair and E. Gonzalez-Duran (St. Andrews, NB, St. John's, NL, Halifax, Nova Scotia, Canada)	417
Effect of fishmeal made from stale versus fresh herring and of added crystalline biogenic amines on growth and survival of blue shrimp <i>Litopenaeus stylirostris</i> fed practical diets M. Tzivia-Salazar, L.E. Cruz-Suárez, D. Ricque-Marie (Nuevo León, Mexico), I.H. Pike (Hertfordshire, United Kingdom), T.K. Smith, A. Harris (Guelph, Ontario, Canada), E. Nygård and J. Opstvedt (Bergen, Norway)	437
Amino acid composition of early stages of cephalopods and effect of amino acid dietary treatments on <i>Octopus vulgaris</i> paralarvae R. Villanueva, J. Riba (Barcelona, Spain), C. Ruiz-Capillas (Madrid, Spain), A.V. González and M. Baeta (Barcelona, Spain)	455
Development, growth and survival of the larvae of queen conch <i>Strombus gigas</i> under laboratory conditions N. Brito-Manzano and D.A. Aranda (Mérida, Mexico)	479
Effects of dietary vitamin C on growth and immune response of Japanese seabass, <i>Lateolabrax japonicus</i> Q. Ai, K. Mai, C. Zhang, W. Xu, Q. Duan, B. Tan and Z. Liufu (Qingdao, P.R. China)	489
Effect of vitamin C derivatives on the performance of larval kuruma shrimp, <i>Marsupenaeus japonicus</i> Y.Y. Moe (Kogishima, Japan; Yangon, Myanmar), S. Koshio, S.-i. Teshima, M. Ishikawa (Kogishima, Japan), Y. Matsunaga (Kumamoto, Japan) and A. Panganiban Jr. (Kagoshima, Japan; Zamboanga City, Philippines)	501
The influence of dietary lipid inclusion and daily ration on growth and smoltification in 1+ Atlantic salmon (<i>Salmo salar</i>) parr I.K. Berrill (Scotland, UK), M.J.R. Porter (Launceston, Tas., Australia) and N.R. Bromage (Scotland, UK)	513
Dietary vitamin E requirement of mrigal, <i>Cirrhinus mrigala</i> fry B.N. Paul, S. Sarkar and S.N. Mohanty (Orissa, India)	529
Expression and localization of some retinoid receptors during European sea bass (<i>Dicentrarchus labrax</i>) larvae development L. Villeneuve (Plouzané, France), E. Gisbert (Plouzané, France; Tarragona, Spain), C.L. Cahu, M.-M. Le Gall and J.L. Zambonino-Infante (Plouzané, France)	537
Effects of dietary vitamins C and E on alternative complement activity, hematology, tissue composition, vitamin concentrations and response to heat stress in juvenile golden shiner (<i>Notemigonus crysoleucas</i>) R. Chen, R. Lochmann, A. Goodwin (Pine Bluff AR, USA), K. Praveen (Athens, GA, USA), K. Dabrowski (Columbus, OH, USA) and K.-J. Lee (Jeju, Korea)	553

Does dietary <i>n</i> -3 highly unsaturated fatty acids level influence the European sea bass (<i>Dicentrarchus labrax</i>) capacity to adapt to a high temperature? J. Person-Le Ruyet (Plouzané, France), A. Skalli (Granada, Spain), B. Dulau, N. Le Bayon, H. Le Delliou and J.H. Robin (Plouzané, France)	571
Estimated amino acid requirements during early ontogeny in fish with different life styles: gilthead seabream (<i>Sparus aurata</i>) and Senegalese sole (<i>Solea senegalensis</i>) C. Aragão, L.E.C. Conceição (Faro, Portugal), H.-J. Fyhn (Bergen, Norway) and M. Teresa Dinis (Faro, Portugal).	589
Effects of phase-feeding dietary phosphorus on survival, growth, and processing characteristics of rainbow trout <i>Oncorhynchus mykiss</i> W.A. Lellis (Wellsboro, PA, USA), F.T. Barrows and R.W. Hardy (Hagerman, ID, USA).	607
Physiology and Endocrinology	
Assessment of water turbidity for evaluation of rainbow trout (<i>Oncorhynchus mykiss</i>) egg quality M. Wojteczak, R. Kowalski (Olsztyn, Poland), S. Dobosz (Żukowo, Poland), K. Goryczko (Żukowo, Olsztyn, Poland), H. Kuzminski (Żukowo, Poland), J. Glogowski and A. Ciereszko (Olsztyn, Poland)	617
Reproductive evaluation of triploid yellowtail flounder, <i>Limanda ferruginea</i> (Storer) A.J. Manning, M.P.M. Burton and L.W. Crim (St. John's, NL, Canada)	625
Effect of pH, temperature and diet on digestive enzyme profiles in the mud crab, <i>Scylla serrata</i> M. Pavasovic, N.A. Richardson, A.J. Anderson (Brisbane, QLD, Australia), D. Mann (Woorim, QLD, Australia) and P.B. Mather (Brisbane, QLD, Australia)	641
Effects of cryoprotectant toxicity on the embryos and larvae of pacific white shrimp <i>Litopenaeus vannamei</i> Q. Dong, J. Lin (Melbourne, Florida, USA) and C. Huang (Shantou, P.R. China)	655
Effects of pre-smolt photoperiod regimes on post-smolt growth rates of different genetic groups of Atlantic salmon (<i>Salmo salar</i>) O.T. Skilbrei (Bergen-Nordnes, Norway) and T. Hansen (Matredal, Norway)	671
Growth, survival and mandible development in the larvae of the shortfin silverside <i>Chirostoma humboldtianum</i> (Valenciennes) (Atheriniformes: Atherinopsidae) under laboratory conditions G. Figueroa-Lucero, O. Meza-González, M.C. Hernández-Rubio, I.d.I.A. Barriga-Sosa, A. Rodríguez-Canto and J.L. Arredondo-Figueroa (México, Mexico)	689
Ontogenic development of the spine and spinal deformities in larval barramundi (<i>Lates calcarifer</i>) culture M.R. Fraser, T.A. Anderson and R. de Nys (Townsville, QLD, Australia).	697
Elimination of adhesiveness in the eggs of shishamo smelt <i>Spirinchus lanceolatus</i> using kaolin treatment to achieve high hatching rate in an environment with a high iron concentration S. Mizuno, Y. Sasaki, N. Omoto and K. Imada (Hokkaido, Japan).	713
Short Communication	
Incidence of an intense <i>Caligus minimus</i> Otto 1821, <i>C. pageti</i> Russel, 1925, <i>C. mugilis</i> Brian, 1935 and <i>C. apodus</i> Brian, 1924 infection in lagoon cultured sea bass (<i>Dicentrarchus labrax</i> L.) in Greece V. Ragias (Thessaloniki, Greece), D. Tontis and F. Athanassopoulou (Karditsa, Greece)	727
Erratum	
Erratum to "DNA marker technologies and their applications in aquaculture genetics" [Aquaculture 238 (2004) 137] Z.J. Liu (Auburn, AL, USA) and J.F. Cordes (Gloucester Point, VA, USA)	735
Contents of Aquaculture, Volume 242	737

